

**From:** Angie Fyfe [mailto:Angie.Fyfe@state.co.us]  
**Sent:** Monday, August 27, 2007 1:25 PM  
**Subject:** Green tip (education) for the week - biofuels

Hello,

Each week, I will share a "green tip of the week." The tips will be an easy "how-to implement" Greening Government idea, or general greening government education. Please share the information with your Green Team and your agency as appropriate.

**Green tip (education) for August 27: Reduce your agency's carbon footprint by using alternate fuels.**

Related Greening Government goal: 25% volumetric reduction in petroleum consumption by 2012.

### **Alternate Fuels to Power Vehicles**

The following fuels are considered alternatives to a strictly petroleum-based fuel (fossil fuels) such as unleaded gasoline and diesel. Some, but not all alternate fuels are also renewable fuels.

A renewable fuel is made from sources that are essentially inexhaustible, unlike fossil fuels, which are finite in supply. Renewable fuels are mostly made from energy crops- switch grass, corn, heavy oil seeds. Renewable fuels may be comprised of one to 100 percent renewable sources.

**Biodiesel** is the pure, or 100 percent, biodiesel fuel. It is referred to as B100 or "neat" biodiesel. A biodiesel blend is pure biodiesel blended with petrodiesel. Biodiesel blends are referred to as BXX. The XX indicates the amount of biodiesel in the blend (i.e., a B20 blend is 20 percent by volume biodiesel and 80 percent by volume petrodiesel).

### **Compressed Natural Gas (CNG)**

CNG is a very clean burning fossil fuel with many of the attributes that would displace standard petroleum products (gasoline and diesel). It is domestically produced. It is an alternate fuel, but it is not a renewable fuel in its normal production today. **Natural gas is a renewable fuel in the form of Biomethane/Biogas. Biomethane and biogas are not currently feed into the natural gas pipeline, but may be in the near future.**

### **Electricity**

Electric-powered vehicles are alternative vehicles, in that they do not burn fossil fuels. Electricity may or may not be considered a renewable fuel in this context, depending on the electric generation. If the electricity is coming from a coal-fired power plant, for example, that is not renewable. If the electricity is generated by some form of renewable power, such as wind or solar, that is renewable.

## **Ethanol**

E85 is composed of 85 percent ethyl alcohol (ethanol) and 15 percent petroleum. E85, like gasoline and diesel fuels, is seasonally adjusted to ensure proper starting and performance in different geographic locations. E85 is used in vehicles called "flex-fueled." These vehicles can run on pure E85, regular gas or any mixture of the two.

## **Hydrogen**

Hydrogen, when burned without the presence of oxygen, emits only water vapor. For this reason, it has great potential for usage in the world's transportation industries. Currently, there are less than 12 fueling stations in the United States and only a handful of demonstration vehicles. Many technical advances must be reached before Hydrogen can be a marketable and economically viable fuel. (Source: Department of Energy)

## **Propane**

Propane, also known as LPG (liquefied petroleum gas), is the nation's third most common vehicular fuel today, after gasoline and diesel. There are over 270,000 on-road vehicles in the United States and more than 10 million worldwide that operate on propane (Source: US Department of Energy, World LP Gas Association). A large number of these are used in fleets that include light-to heavy-duty trucks, buses, taxicabs, police cars, and rental and delivery vehicles. Propane has many of the same positive properties of natural gas, such as being abundant, cheap and cleaner burning than petroleum fuels. (Source: the Propane Council.)

For more information, see the attachments concerning biodiesel and E-85 or visit the biofuels page of the Governor's Energy Office Web site:

<http://www.state.co.us/oemc/programs/transportation/biofuels/index.htm>

The State's expert on biofuels is Stacey Simms, Biofuels & Local Fuels Program Manager, Governor's Energy Office (303) 866.2308 [stacey.simms@state.co.us](mailto:stacey.simms@state.co.us)

If you have green tips you would like to share with the Greening Government Coordinating Council, please send them my way.

Best regards,

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